CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

August 29, 2008

Perry H. Fontana, QEP
Vice President - Projects
Ausra, Inc.
2585 East Bayshore Road
Palo Alto, California 94303

SUBJECT: DATA REQUEST SET 4 - NUMBERS 113 THROUGH 134
CARRIZO ENERGY SOLAR FARM APPLICATION FOR CERTIFICATION (07-AFC-8)

Dear Mr. Fontana,

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff is asking for the information specified in the enclosed data requests related to the Carrizo Energy Solar Farm (CESF) Application for Certification (AFC) (07-AFC-8). The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

This fourth set of data requests (#s 113-134) is being made in the area(s) of biological resources, cultural resources, soil and water resources, traffic and transportation, and waste management. Written responses to the enclosed data requests are due to the Energy Commission staff on or before September 29, 2008, or at such later date as may be mutually agreeable.

If you are unable to provide the information requested, or object to providing the requested information, you must send a written notice to the Committee for the CESF project, and to me, within 20 days of receipt of this notice. The notification must contain the reasons for not providing the information and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 654-4679, or email me at jkessler@energy.state.ca.us.

Sincerely,

John S Kessler

John Kessler
Project Manager

Enclosure
cc: Dockets 07-AFC-8
Webworks
POS

PROOF OF SERVICE (REVISED 7/24/08) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 8/29/08
MS

Technical Area: Biological Resources
Author: Brian McCollough

BACKGROUND

The proposed Carrizo Energy Solar Farm (CESF) would be located in the northern portion of the Carrizo Plain, cover one square mile, and could present a barrier to the movement of wildlife through the area. The CESF would be sited in an area currently used as rangeland and for intermittent dry land farming. These existing land uses provide some habitat value and allow for movement of multiple wildlife species, including the pronghorn antelope, tule elk, and the federal and state endangered San Joaquin kit fox. Pronghorn cross State Route 58 at the project site; this crossing location may be crucial to maintaining connectivity within one group's home range and within the entire San Luis Obispo County pronghorn population. Tule elk are known to utilize the project site and may use it for calving. The project area is in the corridor linking the Carrizo Plains National Monument to satellite populations of San Joaquin kit fox in the Salinas River and Pajaro River watersheds. The federal Recovery Plan for Upland Species of the San Joaquin Valley identifies this corridor as essential to maintaining and recovering those kit fox populations and the species, as connections between populations to counteract inbreeding or declines in any one population. The specified recovery action which applies to this site is: Protect and enhance corridors for movement of kit foxes through the Salinas-Pajaro Region and from the Salinas Valley to the Carrizo Plain and San Joaquin Valley (USFWS 1998).

As stated in the California Department of Fish and Game's (CDFG) comment letter of March 26, 2008, "The impact analysis and mitigation must consider the potential impacts to the corridor and corridor functions. The 'Wildlife Corridors' section in the application does not recognize the kit fox corridor and mischaracterizes the site as an east-west corridor connecting the Temblor and Caliente mountain ranges. Potential corridor impacts to be evaluated should include, but not be limited to, loss of prey base and refugia for immigrating, emigrating, and dispersing individuals, reduced capacity for individuals to reside in the corridor, reduced genetic flow, increased predation resulting from impermeable fences (blocked escape routes), increased exposure to predation due to night lighting, increased exposure to traffic on the highway due to the impermeable fence, reduced corridor width, and increased animal/vehicle traffic collisions due to traffic increases" (CDFG 2008). In addition, the development of additional solar projects in the Carrizo Plain represent a cumulative impact to biological resources, both from habitat loss and impacts to wildlife corridors.

Staff is concerned with the need for a uniform and consistent analysis approach and mitigation to address the potential impacts from direct habitat loss, reduced habitat connectivity, and the cumulative impacts of several very large energy projects (i.e., Ausra's Carrizo Energy Solar Farm, Optisolar's Topaz Solar Farm, and Sun Power's project) proposed in the area. The U.S. Fish and Wildlife Service, CDFG, Energy Commission, and San Luis Obispo County are developing a multi-agency collaborative process, working in coordination with solar project developers in the Carrizo Plain to

model existing land uses, habitat types, and known wildlife movements so that baseline conditions, potential projects, and proposed mitigation can be evaluated to ensure that all impacts are identified and fully mitigated.

In order to help respond to the following data requests, the Energy Commission will set up a series of public meetings with the CESF applicant, other solar project applicants, and agencies (CDFG, San Luis Obispo County, and USFWS) to establish a wildlife corridor working group. The initial meeting will discuss baseline assumptions, approaches for a GIS-based analysis using a tool like Corridor Designer (available for download at www.corridordesign.org), and will reach a consensus on specific data needs and measures required to proceed with the analysis of wildlife impacts. Meetings of the Wildlife Corridor Working Group will also be open to the public. Analysis will require the applicant to perform the following tasks and then provide to the Energy Commission and appropriate agencies the data gathered and the results of the analysis. The timeline for responding to these Biological Resources data requests is expected to occur in reasonable and progressive steps over approximately the next two months in coordination with the Wildlife Corridor Working Group, and thus these data requests are not subject to the normal 30-day response period.

DATA REQUEST

113. Establish a GIS database of existing land uses, habitat types, tule elk calving areas, and movement corridors of the focal animal species in the Carrizo Plains (San Joaquin kit fox, pronghorn, and tule elk);

114. Utilize existing aerial photos to document and predict patterns of use under three scenarios:

a) baseline conditions;

b) with the proposed solar projects (i.e., Ausra's Carrizo Energy Solar Farm, Optisolar's Topaz Solar Farm, and Sun Power's project); and

c) with potential mitigation measures such as use of conservation easements, pronghorn crossings, fencing with openings for kit foxes, or dedicated open spaces to demonstrate how the potential impacts may be mitigated;

115. Identify boundaries and features of the proposed solar projects;

116. Estimate the resistance to animal movements from existing and proposed developments including existing and proposed fencing; and

117. Identify potential compensation lands and migration corridors while coordinating with wildlife experts who understand the species requirements.

References

USFWS 1998—U.S. Fish and Wildlife Service, *Recovery Plan for Upland Species of the San Joaquin Valley, California.* Region 1, Portland, Oregon, 1998.

CDFG 2008—California Department of Fish and Game, Comment letter written by W.E. Loudermilk regarding Review of Carrizo Energy Solar Farm Project Application for Certification. Submitted to California Energy Commission Docket Unit on March 26, 2008.

Technical Area: Cultural Resources
Author: Beverly Bastian

BACKGROUND

In the "Supplement to the Carrizo Energy Solar Farm Application for Certification" (July 2008), the applicant provided information on several proposed changes to the Carrizo Energy Solar Farm (CESF) project description. The detailed information that previously had been provided in the AFC on the dimensions of proposed buildings in the power block, however, is not provided in the supplement for the now rearranged and re-sized power block buildings. Nor are dimensions provided for the temporary buildings and other structures that would be constructed on the laydown area. To assess the potential impact of structure-related excavation on possible buried archaeological resources, unknown at this time, it is necessary to know the lengths and widths and depths of foundations of all of the proposed structures in the power block and on the laydown area, and the length and width and depth of the power block septic tank and leach field. It is also necessary to know the heights of all of the proposed buildings in order to assess the potential impact of the project on the integrity of setting and integrity of feeling of the potentially significant cultural landscape encompassing most of the northern Carrizo Plain.

DATA REQUEST

118. Please provide building length, width, height, and foundation/excavation depth (where required) for each of the following structures:

a. two power-block buildings enclosing Steam Turbine Generators;

b. two power-block air-cooled condensers;

c. power-block administrative control/office building;

d. two power-block buildings housing water treatment equipment;

e. power-block building housing a warehouse and shop;

f. power-block building housing maintenance equipment;

g. power-block control tower adjoining the south end of the maintenance building;

h. three power-block water storage tanks;

i. power-block sewer system septic tank and leach field;

j. laydown-area temporary building for manufacturing;

k. laydown-area temporary building for mirror storage;

l. laydown-area temporary building for steel storage;

m. laydown-area temporary building for footings storage;

n. laydown-area temporary building for equipment storage (west);
o. laydown-area temporary building for equipment storage (east);
p. two laydown-area temporary buildings for offices;
q. laydown-area temporary building for conference room;
r. laydown-area temporary building for worker meal/break room;
s. laydown-area temporary building for worker restrooms;
t. laydown-area temporary foundations for bulk fuel storage tanks;
u. laydown-area bridge footings for permanent creek crossing (west); and
v. laydown-area bridge footings for permanent creek crossing (east).

BACKGROUND

The "Supplement to the Carrizo Energy Solar Farm Application for Certification" (July 2008) does not include a description or a labeled illustration of the rearranged and redesigned on-site switchyard. The newly proposed interconnection to PG&E's Carrizo Plain Substation also is not described or illustrated. In order to assess the potential impact of the construction of these structures on possible buried archaeological resources, unknown at this time, it is necessary to have detailed descriptions and illustrations of the switchyard, and of the newly proposed looping interconnection.

DATA REQUESTS

119. Please provide a description of the components of the re-designed on-site switchyard, including the number of transformers, the number of circuit breakers, the length of all new on-site 230-kV transmission lines and the number, height, and foundation depth of all transmission line support poles, dead-end structures, and take-off structures.
120. Please provide a description of the proposed looping interconnection to the Carrizo Plain Switching Station, including the length of all new off-site 230-kV interconnection lines, and the number, height, and foundation depth of all interconnection line support poles.
121. Please provide a scaled and labeled figure showing the plan of the re-designed switchyard, including the transformers, the circuit breakers, all new on-site 230-kV transmission lines, and placement of all transmission line support poles, dead-end structures, and take-off structures. Please also show in the same figure the plan of the proposed looping interconnection to the Carrizo Plain Substation, including all new off-site 230-kV interconnection lines and placement of all interconnection line support poles.

Technical Area: Water Resources
Author: Mark Lindley

WATER RESOURCES AND WATER SUPPLY

At the August 5, 2008 Data Response and Issue Resolution Workshop, the applicant committed to revise or supplement the "Hydrology and Hydrogeology of the Vicinity of the Proposed Carrizo Energy Solar Farm (CESF), San Luis Obispo County, California" dated June 26, 2008. In the following data requests, CEC staff requests that the applicant, in the process of revising and supplementing that report, examine cumulative impacts associated with groundwater withdrawal at CESF and the neighboring Topaz/Opti-Solar facility planned for areas north and east of the CESF Site. Also, as discussed at the workshop, estimates of average annual runoff utilizing runoff coefficients that are more appropriate for typical daily rainfall depths would result in more accurate and reliable analysis. The following data requests are intended to assist the applicant in revising and supplementing the Hydrology and Hydrogeology report to address the potential cumulative impacts and other comments from the workshop.

BACKGROUND

SURFACE WATER HYDROLOGY

In the surface water analysis that appears in the "Hydrology and Hydrogeology of the Vicinity of the Proposed Carrizo Energy Solar Farm (CESF)", evaporation and evapo-transpiration were together identified as one of the primary causes of water loss in the Carrizo Plain. The CESF would include mirror panels shading up to 90 percent of the site surface. This shading would inhibit plant growth and limit evaporation/evapo-transpiration rates from the project site after construction as compared to current rates.

Data Requests

122. Please provide an estimate of the difference between anticipated evaporation/evapo-transpiration rates at the CESF site under (a) existing conditions and (b) following construction. Please factor in this estimated change in evaporation/evapo-transpiration in an updated analysis of surface water balance, including estimated recharge and runoff from the site.

123. Please revise the estimates of average annual runoff utilizing runoff coefficients that are more appropriate for typical daily rainfall depths. Please use the Soil Conservation Service Curve Number approach with at least 5 to 10 years of daily rainfall records to yield better estimates of average annual runoff.

BACKGROUND

GROUNDWATER / HYDROGEOLOGY

The groundwater model included in the "Hydrology and Hydrogeology of the Vicinity of the Proposed Carrizo Energy Solar Farm (CESF)", assumes that wells on the Carrizo Plain are pumping at about 12 gpm (19 ac-ft/yr) or at their maximum pumping rate with a 35 percent duty cycle. These assumed pumping rates appear much higher than

staff's understanding of local pumping rates on the Carrizo Plain. Local experience indicates that pumping rates used in the model may be an order of magnitude higher than what is currently pumped. In addition, the Topaz/Opti-Solar project proponent recently submitted information regarding its intended use of groundwater. The Topaz/Opti-Solar facility states that it intends to utilize approximately 23,910 gpd (26.7 ac-ft/yr) over three years of construction and approximately 3,060 gpd (3.5 ac-ft/yr) during operations.

Data Requests

124. Please revise the assumed groundwater pumping rate for wells identified in the Carrizo Plain based on known pumping rates within the plain from data collected from existing property owners. Please ensure that all revised assumed pumping rates reflect the typical water use requirements in the Carrizo Plain for dry farming, rangeland cattle ranching activities (1 head of cattle per approximately 10 acres), and household water use (~0.5 to 1 ac-ft/yr).

125. Please provide groundwater model results using the revised pumping rates and revised recharge rate determined in the surface water analysis for the following:

a. the existing no-project scenario;
b. a CESF pumping scenario; and
c. a CESF + Topaz/ Opti-Solar scenario to help assess potential cumulative impacts of ground water withdrawal from the two proposed projects.

Technical Area: Traffic and Transportation
Author: Jason Ricks

BACKGROUND

Section 2.11.5 (LORS Compliance) of the July 2008 Supplement to the AFC states that the State Highway Transportation Permit presented in the Project AFC includes requirements for the use of pilot cars on SR-58 as the need arises. However, there is no other reference to the potential need for or use of pilot cars.

At the public workshop held on August 5, 2008 several questions were raised regarding the use of pilot cars and California Highway Patrol (CHP) escorts. For example, it was noted that if project construction were to involve oversized loads on trucks, the use of pilot cars or CHP escorts would be required. The use of pilot cars and CHP escorts would result in an increase in the construction trip assumptions presented in the AFC.

The Caltrans Pilot Car Requirements for SR-58 and SR-46 (which would be used to access Bitterwater Road) are listed below:

Route	>10'0" to 11'0"	>11'0" to 12'0"	>12'0" to 13'0"	>13'0" to 14'0"	>14'0" to 15'0"	>15'0" to 16'0"	>16'0"
SR-46	None	None	1 Pilot Car	1 Pilot Car	2 Pilot Cars	CHP	CHP
SR-58	1 Pilot Car	1 Pilot Car	2 Pilot Cars	2 Pilot Cars	2 Pilot Cars	CHP	CHP

DATA REQUEST

126. Please provide an estimate of how many truck deliveries would require pilot cars or escorts (according to the Caltrans requirements set forth above) during peak construction, as well as an estimate of the additional pilot and escort vehicle trips that will result, and indicate on which routes the escorted delivery trucks would travel.

127. Please include the additional estimated pilot and escort vehicle trips identified in your response to the preceding Data Request in your construction trip generation assumptions and provide a revised analysis.

BACKGROUND

According to the July 2008 Supplement to the AFC, 32 buses and trucks (consisting of 21 buses, 4 trucks for equipment deliveries, five (5) construction trucks, and two (2) trucks related to onsite manufacturing) will travel to and from the site during the AM Peak Hour. With or without additional trips from pilot cars, it is likely these vehicles would cause delays to other motorists on SR-58 because of the slower rate of speed these buses and trucks must travel in order to, for example, safely negotiate the sharp curves on SR-58 between SR-33 and the project site.

DATA REQUEST

128. Please provide an estimate of the average delay expected to be caused to vehicles traveling between the project site and SR-33 during peak hours by construction truck and bus traffic.

Technical Area: Waste Management
Author: Suzanne Phinney

BACKGROUND

Section 1.4 of the Supplement to the AFC discusses the construction and dismantling of the onsite manufacturing building as a part of project construction. However, Waste Management Section 2.14.2.3 (Onsite Manufacturing) does not provide information on the waste streams associated with construction and dismantling of the building. For example, the Supplement to the AFC (page 1-3) indicates that the building would require approximately 40,000 square feet of floor space with a foundation comprised of 6-inch reinforced concrete flooring. Approximately 900 cubic yards of concrete would be required for the flooring. Additional materials would include rebar, structural steel building frames, building panels and robotic manufacturing components.

DATA REQUESTS

129. Please provide the amount, type and method of disposal of hazardous and non-hazardous wastes from construction and dismantling of the onsite manufacturing building.
130. Please discuss whether there are any local ordinances or regulations that apply to demolition waste.

BACKGROUND

Section 2.14.2.3 of the Supplemental AFC discusses sources and disposal of wastes expected from the onsite manufacturing process. These wastes include zinc particulate, mirror glass, and empty adhesive drums. Section 2.14.2.3 concludes that "hazardous and non-hazardous waste generated during onsite manufacturing is not expected to significantly impact available landfill capacity," but does not quantify or classify any of the waste streams.

DATA REQUESTS

131. Please quantify the waste materials from onsite manufacturing.
132. Please clarify which wastes are considered hazardous.

BACKGROUND

The AFC and Supplemental AFC mention estimated amounts of waste streams from various activities. The cumulative amounts, however, are unclear.

DATA REQUESTS

133. Please provide the cumulative amount of hazardous and non-hazardous wastes from demolition and construction.

134. Please provide the cumulative amount of hazardous and non-hazardous wastes from operations and manufacturing, including construction and dismantling of the onsite manufacturing building.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION *For the CARRIZO ENERGY SOLAR FARM* **PROJECT**	**Docket No. 07-AFC-8** **PROOF OF SERVICE** **(Revised 7/24/2008)**

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

***CALIFORNIA ENERGY COMMISSION**
Attn: Docket No. 07-AFC-8
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Perry H. Fontana, QEP
Vice President-Projects
Ausra, Inc.
2585 East Bayshore Road
Palo Alto, California 94303
perry@ausra.com

APPLICANT CONSULTANT

Angela Leiba, GISP
Senior Project Manager
GIS Manager/Visual Resource Specialist
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
angela_leiba@urscorp.com

Kristen E. Walker, J.D.
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, California 92108
kristen_e_walker@urscorp.com

COUNSEL FOR APPLICANT

Jane Luckhardt, Esq.
Downey Brand Law Firm
555 Capitol Mall, 10th Floor
Sacramento, CA 95814
jluckhardt@downeybrand.com

INTERESTED AGENCIES

***California ISO**
P.O. Box 639014
Folsom, CA 95763-9014
e-recipient@casio.com

INTERVENORS

California Unions for Reliable Energy (CURE)
c/o Tanya Gulesserian
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com

ENERGY COMMISSION

Jackalyne Pfannenstiel
Chairman and Presiding Member
jpfannen@energy.state.ca.us

Jeffrey D. Byron
Commissioner and Associate Member
jbyron@energy.state.ca.us

Gary Fay
Hearing Officer
gfay@energy.state.ca.us

*** John Kessler**
Project Manager
Jkessler@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us

Michael Doughton
Staff Counsel
mdoughto@energy.state.ca.us

Public Adviser's Office
pao@energy.state.ca.us

DECLARATION OF SERVICE

I, Maria Sergoyan, declare that on August 29, 2008, I deposited copies of the attached Data Request Set 4 – Numbers 113 through 134 for the Carrizo Energy Solar Farm Project (07-AFC-8) in the United States mail at Sacramento, Ca with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Original Signature in Dockets
Maria Sergoyan